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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,709	07/28/2003	Atsushi Kono	MAT-8450US	6708

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EXAMINER

VORTMAN, ANATOLY

ART UNIT	PAPER NUMBER
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2835

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/628,709

Applicant(s)

KONO ET AL.

Examiner

Anatoly Vortman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Amendment*

1. The submission of the amendment filed on 04/06/05 is acknowledged. At this point claims 1, 2, 10, and 11 have been amended and new claims 19-28 have been added. Thus, claims 1-28 are pending in the instant application.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of US/5,849,424 to Sugawara et al., (Sugawara).

Regarding claims 1, 2, and 8, AAPA teaches (see instant application, Fig. 5; p. 1, lines 10-27; and p. 11, lines 1-12) a thermal fuse comprising a fusible alloy (1) including tin; a couple of lead conductors (2) connected to both ends of said fusible alloy (1), respectively; and surface layers (2a) made of composition having no orientation and comprising metal including tin as main substance (i.e. substantially entirely made of tin) (column 5, lines 65-67 and column 6,

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lines 7 and 8), said surface layers (2a) provided on said lead conductors (2), respectively, but did not disclose that said surface layers have thickness not greater than 14 $\mu$ m and not less than 1 $\mu$ m.

Sugawara disclosed (Fig. 1, 2) a lead connector having surface layer of tin for improving workability and corrosion resistance (column 5, lines 52-64), wherein said layer of tin has thickness of 1-10  $\mu$ m, i.e. not greater than 14 $\mu$ m and not less than 1 $\mu$ m (column 5, lines 65-67).

Since inventions of AAPA and of Sugawara are from the same field of endeavor (tin covered electrical connectors and devices employing thereof), the purpose of the tin surface layers having thickness 1-10  $\mu$ m taught by Sugawara would be recognized in the device of AAPA.

It would have been obvious to a person of ordinary skill in electrical arts pertained to electrical connectors at the time the invention was made, to make said tin surface layers of AAPA having thickness not greater than 14 $\mu$ m and not less than 1 $\mu$ m, as taught by Sugawara, in order to improve workability and resistance to corrosion for the AAPA's lead conductors, thus reducing manufacturing costs and augmenting the longevity of the device.

Alternatively, it would have been obvious to a person of ordinary skill in the electrical arts pertained to electrical connectors at the time the invention was made, to make said tin surface layers of AAPA having thickness not greater than 14 $\mu$ m and not less than 1 $\mu$ m, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 3-7, claims recite additional tin supplementing materials to make up the composition of the surface layers (i.e. silver, copper and bismuth).

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It would have been obvious for a person of ordinary skill in the arts pertained to electrical connectors at the time the invention was made to supplement tin in said surface layers with any suitable well known material, such as the aforementioned silver, copper and bismuth, in order to achieve desired characteristics of the lead conductors, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Regarding claims 19-23, the claims recite the various ranges of wt.% for the aforementioned supplementing materials (i.e. silver, copper and bismuth).

It would have been obvious to one having ordinary skill in the arts pertained to electrical connectors at the time the invention was made to select any appropriate ranges for said silver, copper and bismuth, in order to achieve desired properties (e.g. workability, corrosion resistance, etc.) since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claims 10-18 and 24-28, the method steps recited in the claims are inherently necessitated by the device structure as taught by combination of AAPA and Sugawara.

### ***Response to Arguments***

4. Applicant's arguments have been fully considered but they are not persuasive. The gist of the arguments is directed to the following Applicant's assumptions:

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a) “[S]ugawara uses a small amount of tin in a composition where the percentage of tin is substantially less than 50% of the total” (see Amendment, p. 9, second paragraph), and

b) that “[T]he purpose of the tin in each device is different” (see Amendment, p. 9, second paragraph).

Regarding the first assumption, the Examiner believes that Applicant is confusing two different compositions of Sugawara, the first one, which is used for making the connector itself and the other one, which is used for making the surface layers. The composition used for making the connector itself is indeed has the percentage of tin, which is substantially less than 50% of the total. The another one, however, (the one to which the Examiner has referred in the rejection above) includes tin as main substance (i.e. substantially entirely made of tin) (column 5, lines 65-67 and column 6, lines 7 and 8).

Regarding the second assumption, the Examiner would like to remind the Applicant that the reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by Applicant. *In re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); *In re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991). Although *Ex parte Levengood*, 28 USPQ2d 1300, 1302 (Bd. Pat. App. & Inter. 1993) states that obviousness cannot be established by combining references "without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done" (emphasis added), reading the quotation in context it is clear that while there must be motivation to make the claimed

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invention, there is no requirement that the prior art provide the same reason as the Applicant to make the claimed invention.

In view of the rebuttals presented above, the Applicant's arguments are deemed to be moot. The outstanding rejection of the claims is believed to be proper and is maintained herein.

### *Conclusion*

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AV

A handwritten signature in black ink, appearing to read 'A. Vortman', with a long horizontal line extending to the right.

Anatoly Vortman  
Primary Examiner  
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